

# H

## Body Composition Data Based on the Third National Health and Nutrition Examination Survey (NHANES III), 1988–1994

**TABLE H-1** Body Measurement Summary Statistics, Men and Women 19 Years of Age and Older, NHANES III (1988–1994)

Measure	Sex <sup>a</sup>	<i>n</i> <sup>b</sup>	Mean <sup>c</sup>	Standard Error <sup>c</sup>
Percent body fat <sup>e</sup>	M	7,324	21.9	0.1
	F	7,724	32.4	0.2
Body mass index (kg/m <sup>2</sup> )	M	7,918	26.5	0.1
	F	8,522	26.4	0.1
Weight (kg)	M	7,918	82.0	0.3
	F	8,524	69.2	0.3
Height (cm)	M	7,921	175.6	0.1
	F	8,540	161.8	0.1
Waist circumference (cm)	M	7,559	95.1	0.2
	F	8,105	88.6	0.3
Triceps skinfold (mm) <sup>f</sup>	M	7,532	13.1	0.1
	F	7,870	23.5	0.2

<sup>a</sup> M = male, F = female. Pregnant and/or lactating women and women who had “blank but applicable” pregnancy and lactating status or who responded “I don’t know” to questions on pregnancy and lactating status were excluded from all analyses.

<sup>b</sup> *n* = Number of individuals with valid measurements; total sample size was 7,936 men and 8,553 women (nonpregnant/nonlactating).

<sup>c</sup> Means and standard errors were calculated with National Center for Health Statistics (NCHS) sampling weights and WesVar Complex Samples Version 3.0.

<sup>d</sup> Standard deviation = standard error multiplied by the square root of the sample size (*n*).

<sup>e</sup> Percent body fat = 100 × (W – FFM)/W; FFM for each survey respondent was derived using the following equations:

Standard Deviation <sup>d</sup>	Minimum	Maximum
11.6	0.4	49.4
17.8	0.6	58.6
7.8	13.8	70.2
11.7	11.7	79.6
29.4	38.4	241.8
31.1	31.2	213.5
9.9	139.4	206.5
9.9	126.9	183.1
18.6	58.9	174.1
30.2	57.5	170.4
9.7	2.6	46.8
15.2	1.9	48.5

Men:  $\text{FFM} = -10.68 + 0.65 \text{ H}^2/\text{R} + 0.26 \text{ W} + 0.02 \text{ R}$

Women:  $\text{FFM} = -9.53 + 0.69 \text{ H}^2/\text{R} + 0.17 \text{ W} + 0.02 \text{ R}$

where FFM = fat free mass (kg), H = height (cm), R = resistance (ohms), W = weight (kg). The estimate of FFM exceeded W for eight individuals; these individuals were excluded from analyses involving percent body fat.

<sup>f</sup> Skinfold thickness exceeding 48.5 mm was too large for the caliper; measurements were not recorded for these individuals and they were excluded from analyses involving triceps skinfold.

DATA SOURCE: U.S. Department of Health and Human Services, NCHS.

**TABLE H-2** Body Measurement Summary Statistics, Men and Women 19 Years of Age and Older with Body Mass Index (BMI)  $\geq 18.5$  and  $< 25$  kg/m<sup>2</sup>, NHANES III (1988–1994)

Measure	Sex <sup>a</sup>	<i>n</i> <sup>b</sup>	Mean <sup>c</sup>	Standard Error <sup>c</sup>
Percent body fat <sup>e</sup>	M	2,828	17.6	0.1
	F	2,899	26.7	0.2
BMI (kg/m <sup>2</sup> )	M	3,055	22.7	0.1
	F	3,170	22.0	< 0.05
Weight (kg)	M	3,055	69.7	0.3
	F	3,170	57.9	0.1
Height (cm)	M	3,055	175.3	0.2
	F	3,170	162.3	0.1
Waist circumference (cm)	M	2,907	84.7	0.2
	F	3,024	78.0	0.2
Triceps skinfold (mm)	M	2,937	9.7	0.1
	F	3,039	18.2	0.1

<sup>a</sup> M = male, F = female. Pregnant and/or lactating women and women who had “blank but applicable” pregnancy and lactating status or who responded “I don’t know” to questions on pregnancy and lactating status were excluded from all analyses.

<sup>b</sup> *n* = Number of individuals with valid measurements; total sample size was 3,055 men and 3,170 women (nonpregnant/nonlactating).

<sup>c</sup> Means and standard errors were calculated with National Center for Health Statistics (NCHS) sampling weights and WesVar Complex Samples Version 3.0.

<sup>d</sup> Standard deviation = standard error multiplied by the square root of the sample size (*n*).

Standard Deviation <sup>d</sup>	Minimum	Maximum
7.8	0.4	31.7
8.9	6.8	37.8
3.2	18.5	24.9
2.2	18.5	24.9
13.9	40.7	103.5
6.9	32.5	79.1
10.9	142.7	206.5
7.7	126.9	183.1
8.9	62.8	106.0
13.4	59.4	114.3
5.6	2.8	28.9
7.2	1.9	40.0

<sup>e</sup> Percent body fat =  $100 \times (W - \text{FFM}) / W$ ; FFM for each survey respondent was derived using the following equations:

$$\text{Men: FFM} = -10.68 + 0.65 H^2/R + 0.26 W + 0.02 R$$

$$\text{Women: FFM} = -9.53 + 0.69 H^2/R + 0.17 W + 0.02 R$$

where FFM = fat free mass (kg), H = height (cm), R = resistance (ohms), W = weight (kg). The estimate of FFM exceeded W for four individuals; these individuals were excluded from analyses involving percent body fat.

DATA SOURCE: U.S. Department of Health and Human Services, NCHS.

**TABLE H-3** Regression Analysis of Body Measurements:  
Percent Body Fat<sup>a</sup> Versus Body Mass Index (BMI), Men and  
Women 19 Years of Age and Older, NHANES III (1988–1994)

Sex ( <i>n</i> ) <sup>b</sup>	Parameter	Results <sup>c</sup>	
		Parameter Estimate	Standard Error of Estimate
M (7,324)	Intercept	−4.3422	0.6765
	BMI (kg/m <sup>2</sup> )	0.9921	0.0261
	R square value	0.5549	
F (7,724)	Intercept	1.4303	0.6787
	BMI (kg/m <sup>2</sup> )	1.1735	0.0256
	R square value	0.7745	

<sup>a</sup> Percent body fat = 100 × (W − FFM)/W; FFM for each survey respondent was derived using the following equations:

Men:     FFM = −10.68 + 0.65 H<sup>2</sup>/R + 0.26 W + 0.02 R  
Women: FFM = −9.53 + 0.69 H<sup>2</sup>/R + 0.17 W + 0.02 R

where FFM = fat free mass (kg), H = height (cm), R = resistance (ohms), W = weight (kg). The estimate of FFM exceeded W for eight individuals; these individuals were excluded from analyses involving percent body fat.

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Test for $H_0$ : Parameter = 0	Probability >  T
-6.4190	0.0000
38.0077	0.0000
2.1073	0.0399
45.8088	0.0000

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<sup>b</sup> M = male, F = female,  $n$  = number of individuals with valid measurements. Pregnant and/or lactating women and women who had “blank but applicable” pregnancy and lactating status or who responded “I don’t know” to questions on pregnancy and lactating status were excluded from all analyses.

<sup>c</sup> Regression calculated with National Center for Health Statistics (NCHS) sampling weights and WesVar Complex Samples Version 3.0.

DATA SOURCE: U.S. Department of Health and Human Services, NCHS.

**TABLE H-4** Regression Analysis of Body Measurements: Percent Body Fat<sup>a</sup> Versus Body Mass Index (BMI) and Waist Circumference, Men and Women 19 Years of Age and Older, NHANES III (1988–1994)

Sex ( <i>n</i> ) <sup>b</sup>	Parameter	Results <sup>c</sup>	
		Parameter Estimate	Standard Error of Estimate
M (7,142)	Intercept	−11.8819	0.5909
	BMI (kg/m <sup>2</sup> )	0.3632	0.0442
	Waist circumference (cm)	0.2547	0.0134
	R square value	0.6082	
F (7,498)	Intercept	−3.5296	0.6029
	BMI (kg/m <sup>2</sup> )	0.8294	0.0334
	Waist circumference (cm)	0.1588	0.0085
	R square value	0.7910	
		F Value	Numerator Degrees of Freedom
M	Overall fit	1,669.3326	2
F	Overall fit	1,812.6733	2

<sup>a</sup> Percent body fat =  $100 \times (W - \text{FFM}) / W$ ; FFM for each survey respondent was derived using the following equations:

Men:  $\text{FFM} = -10.68 + 0.65 H^2 / R + 0.26 W + 0.02 R$   
Women:  $\text{FFM} = -9.53 + 0.69 H^2 / R + 0.17 W + 0.02 R$

where FFM = fat free mass (kg), H = height (cm), R = resistance (ohms), W = weight (kg). The estimate of FFM exceeded W for eight individuals; these individuals were excluded from analyses involving percent body fat.

Test for $H_0$ : Parameter = 0	Probability >  T
-20.1097	0.0000
8.2191	0.0000
18.9496	0.0000
-5.8545	0.0000
24.8456	0.0000
18.6091	0.0000
Denominator Degrees of Freedom	Probability > F
51	0.0000
51	0.0000

<sup>b</sup> M = male, F = female,  $n$  = number of individuals with valid measurements. Pregnant and/or lactating women and women who had “blank but applicable” pregnancy and lactating status or who responded “I don’t know” to questions on pregnancy and lactating status were excluded from all analyses.

<sup>c</sup> Regression calculated with National Center for Health Statistics (NCHS) sampling weights and WesVar Complex Samples Version 3.0.

DATA SOURCE: U.S. Department of Health and Human Services, NCHS.



TABLE H-5 Regression Analysis of Body Measurements:  
Percent Body Fat Versus Body Mass Index (BMI) and  
Triceps Skinfold,<sup>a</sup> Men and Women 19 Years of Age and Older,  
NHANES III (1988–1994)

Sex ( <i>n</i> ) <sup>b</sup>	Parameter	Results <sup>c</sup>	
		Parameter Estimate	Standard Error of Estimate
M (7,091)	Intercept	−2.5154	0.5854
	BMI (kg/m <sup>2</sup> )	0.7997	0.0261
	Triceps skinfold (mm)	0.2499	0.0162
	R square value	0.5796	
F (7,266)	Intercept	1.1686	0.4238
	BMI (kg/m <sup>2</sup> )	0.9386	0.0214
	Triceps skinfold (mm)	0.2765	0.0102
	R square value	0.8167	
		F Value	Numerator Degrees of Freedom
M	Overall fit	1,384.0891	2
F	Overall fit	4,851.3613	2

<sup>a</sup> Percent body fat = 100 × (W − FFM)/W; FFM for each survey respondent was derived using the following equations:

Men:      FFM = −10.68 + 0.65 H<sup>2</sup>/R + 0.26 W + 0.02 R  
Women:   FFM = −9.53 + 0.69 H<sup>2</sup>/R + 0.17 W + 0.02 R

where FFM = fat free mass (kg), H = height (cm), R = resistance (ohms), W = weight (kg). The estimate of FFM exceeded W for eight individuals; these individuals were excluded from analyses involving percent body fat. Skinfold thickness exceeding 48.5

Test for $H_0$ : Parameter = 0	Probability >  T
-4.2966	0.0001
30.5997	0.0000
15.4193	0.0000
2.7573	0.0080
43.9202	0.0000
26.9924	0.0000
Denominator Degrees of Freedom	Probability > F
51	0.0000
51	0.0000

mm was too large for the caliper; measurements were not recorded for these individuals. These individuals were excluded from analyses involving triceps skinfold.

<sup>b</sup> M = male, F = female,  $n$  = number of individuals with valid measurements. Pregnant and/or lactating women and women who had "blank but applicable" pregnancy and lactating status or who responded "I don't know" to questions on pregnancy and lactating status were excluded from all analyses.

<sup>c</sup> Regression calculated with National Center for Health Statistics (NCHS) sampling weights and WesVar Complex Samples Version 3.0.

DATA SOURCE: U.S. Department of Health and Human Services, NCHS.

**TABLE H-6** Regression Analysis of Body Measurements:  
Percent Body Fat<sup>a</sup> Versus Height, Men and Women 19 Years of  
Age and Older, NHANES III (1988–1994)

Sex ( <i>n</i> ) <sup>b</sup>	Parameter	Results <sup>c</sup>	
		Parameter Estimate	Standard Error of Estimate
M (7,324)	Intercept	21.6690	2.6860
	Height (cm)	0.0016	0.0155
	R square value	0	
F (7,724)	Intercept	42.4383	2.5259
	Height (cm)	−0.0620	0.0156
	R square value	0.0026	

<sup>a</sup> Percent body fat =  $100 \times (W - \text{FFM})/W$ ; FFM for each survey respondent was derived using the following equations:

Men:       $\text{FFM} = -10.68 + 0.65 \text{ H}^2/\text{R} + 0.26 \text{ W} + 0.02 \text{ R}$   
Women:  $\text{FFM} = -9.53 + 0.69 \text{ H}^2/\text{R} + 0.17 \text{ W} + 0.02 \text{ R}$

where FFM = fat free mass (kg), H = height (cm), R = resistance (ohms), W = weight (kg). The estimate of FFM exceeded W for eight individuals; these individuals were excluded from analyses involving percent body fat.

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Test for $H_0$ : Parameter = 0	Probability >  T
8.0674	0.0000
0.1013	0.9197
16.8016	0.0000
-3.9684	0.0002

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<sup>b</sup> M = male, F = female,  $n$  = number of individuals with valid measurements. Pregnant and/or lactating women and women who had “blank but applicable” pregnancy and lactating status or who responded “I don’t know” to questions on pregnancy and lactating status were excluded from all analyses.

<sup>c</sup> Regression calculated with National Center for Health Statistics (NCHS) sampling weights and WesVar Complex Samples Version 3.0.

DATA SOURCE: U.S. Department of Health and Human Services, NCHS.

**TABLE H-7** Regression Analysis of Body Measurements:  
Percent Body Fat<sup>a</sup> Versus Body Weight, Men and Women 19  
Years of Age and Older, NHANES III (1988–1994)

Sex ( <i>n</i> ) <sup>b</sup>	Parameter	Results <sup>c</sup>	
		Parameter Estimate	Standard Error of Estimate
M (7,324)	Intercept	1.4555	0.5302
	Body weight (kg)	0.2500	0.0065
	R square value	0.4363	
F (7,724)	Intercept	3.9622	0.5224
	Body weight (kg)	0.4114	0.0076
	R square value	0.6961	

<sup>a</sup> Percent body fat =  $100 \times (W - \text{FFM}) / W$ ; FFM for each survey respondent was derived using the following equations:

Men:       $\text{FFM} = -10.68 + 0.65 \text{ H}^2 / \text{R} + 0.26 \text{ W} + 0.02 \text{ R}$

Women:    $\text{FFM} = -9.53 + 0.69 \text{ H}^2 / \text{R} + 0.17 \text{ W} + 0.02 \text{ R}$

where FFM = fat free mass (kg), H = height (cm), R = resistance (ohms), W = weight (kg). The estimate of FFM exceeded W for eight individuals; these individuals were excluded from analyses involving percent body fat.

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Test for $H_0$ : Parameter = 0	Probability >  T
2.7450	0.0083
38.3096	0.0000
7.5851	0.0000
54.3469	0.0000

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<sup>b</sup> M = male, F = female,  $n$  = number of individuals with valid measurements. Pregnant and/or lactating women and women who had “blank but applicable” pregnancy and lactating status or who responded “I don’t know” to questions on pregnancy and lactating status were excluded from all analyses.

<sup>c</sup> Regression calculated with National Center for Health Statistics (NCHS) sampling weights and WesVar Complex Samples Version 3.0.

DATA SOURCE: U.S. Department of Health and Human Services, NCHS.

**TABLE H-8** Regression Analysis of Body Measurements:  
Percent Body Fat Versus Triceps Skinfold,<sup>a</sup> Men and Women  
19 Years of Age and Older, NHANES III (1988–1994)

Sex ( <i>n</i> ) <sup>b</sup>	Parameter	Results <sup>c</sup>	
		Parameter Estimate	Standard Error of Estimate
M (7,091)	Intercept	13.4488	0.2295
	Triceps skinfold (mm)	0.6394	0.0121
	R square value	0.4099	
F (7,266)	Intercept	13.6974	0.2295
	Triceps skinfold (mm)	0.7821	0.0076
	R square value	0.6522	

<sup>a</sup> Percent body fat = 100 × (W – FFM)/W; FFM for each survey respondent was derived using the following equations:

Men:      FFM = −10.68 + 0.65 H<sup>2</sup>/R + 0.26 W + 0.02 R

Women:   FFM = −9.53 + 0.69 H<sup>2</sup>/R + 0.17 W + 0.02 R

where FFM = fat free mass (kg), H = height (cm), R = resistance (ohms), W = weight (kg). The estimate of FFM exceeded W for eight individuals; these individuals were excluded from analyses involving percent body fat. Skinfold thickness exceeding 48.5

Test for $H_0$ : Parameter = 0	Probability >  T
58.5945	0.0000
53.0528	0.0000
59.6845	0.0000
102.6052	0.0000

mm was too large for the caliper; measurements were not recorded for these individuals. These individuals were excluded from analyses involving triceps skinfold.

<sup>b</sup> M = male, F = female, *n* = number of individuals with valid measurements. Pregnant and/or lactating women and women who had “blank but applicable” pregnancy and lactating status or who responded “I don’t know” to questions on pregnancy and lactating status were excluded from all analyses.

<sup>c</sup> Regression calculated with National Center for Health Statistics (NCHS) sampling weights and WesVar Complex Samples Version 3.0.

DATA SOURCE: U.S. Department of Health and Human Services, NCHS.



**TABLE H-9** Regression Analysis of Body Measurements:  
Percent Body Fat<sup>a</sup> Versus Waist Circumference, Men and  
Women 19 Years of Age and Older, NHANES III (1988–1994)

Sex ( <i>n</i> ) <sup>b</sup>	Parameter	Results <sup>c</sup>	
		Parameter Estimate	Standard Error of Estimate
M (7,142)	Intercept	−13.3247	0.6059
	Waist circumference (cm)	0.3712	0.0062
	R square value	0.5949	
F (7,498)	Intercept	−8.6807	0.5524
	Waist circumference (cm)	0.4645	0.0060
	R square value	0.7133	

<sup>a</sup> Percent body fat =  $100 \times (W - \text{FFM})/W$ ; FFM for each survey respondent was derived using the following equations:

Men:       $\text{FFM} = -10.68 + 0.65 \text{ H}^2/\text{R} + 0.26 \text{ W} + 0.02 \text{ R}$

Women:  $\text{FFM} = -9.53 + 0.69 \text{ H}^2/\text{R} + 0.17 \text{ W} + 0.02 \text{ R}$

where FFM = fat free mass (kg), H = height (cm), R = resistance (ohms), W = weight (kg). The estimate of FFM exceeded W for eight individuals; these individuals were excluded from analyses involving percent body fat.

Test for $H_0$ : Parameter = 0	Probability >  T
-21.9934	0.0000
59.6373	0.0000
-15.7148	0.0000
77.4189	0.0000

<sup>b</sup> M = male, F = female, *n* = number of individuals with valid measurements. Pregnant and/or lactating women and women who had “blank but applicable” pregnancy and lactating status or who responded “I don’t know” to questions on pregnancy and lactating status were excluded from all analyses.

<sup>c</sup> Regression calculated with National Center for Health Statistics (NCHS) sampling weights and WesVar Complex Samples Version 3.0.

DATA SOURCE: U.S. Department of Health and Human Services, NCHS.

**TABLE H-10** Regression Analysis of Body Measurements:  
Percent Body Fat<sup>a</sup> Versus Waist Circumference Squared, Men and  
Women 19 Years of Age and Older, NHANES III (1988–1994)

Sex ( <i>n</i> ) <sup>b</sup>	Parameter	Results <sup>c</sup>	
		Parameter Estimate	Standard Error of Estimate
M (7,142)	Intercept	5.1113	0.3783
	Waist circumference squared (cm <sup>2</sup> )	0.0018	0.0000
	R square value	0.5739	
F (7,498)	Intercept	13.1167	0.3910
	Waist circumference squared (cm <sup>2</sup> )	0.0024	0.0000
	R square value	0.6753	

<sup>a</sup> Percent body fat = 100 × (W – FFM)/W; FFM for each survey respondent was derived using the following equations:

Men:     FFM = −10.68 + 0.65 H<sup>2</sup>/R + 0.26 W + 0.02 R

Women: FFM = −9.53 + 0.69 H<sup>2</sup>/R + 0.17 W + 0.02 R

where FFM = fat free mass (kg), H = height (cm), R = resistance (ohms), W = weight (kg). The estimate of FFM exceeded W for eight individuals; these individuals were excluded from analyses involving percent body fat.

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Test for $H_0$ : Parameter = 0	Probability >  T
13.5125	0.0000
46.6337	0.0000
33.5446	0.0000
52.9711	0.0000

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<sup>b</sup> M = male, F = female,  $n$  = number of individuals with valid measurements. Pregnant and/or lactating women and women who had “blank but applicable” pregnancy and lactating status or who responded “I don’t know” to questions on pregnancy and lactating status were excluded from all analyses.

<sup>c</sup> Regression calculated with National Center for Health Statistics (NCHS) sampling weights and WesVar Complex Samples Version 3.0.

DATA SOURCE: U.S. Department of Health and Human Services, NCHS.

**TABLE H-11** Regression Analysis of Body Measurements: Percent Body Fat<sup>a</sup> Versus Body Mass Index (BMI) and Waist Circumference Squared, Men and Women 19 Years of Age and Older, NHANES III (1988–1994)

Sex ( <i>n</i> ) <sup>b</sup>	Parameter	Results <sup>c</sup>	
		Parameter Estimate	Standard Error of Estimate
M (7,142)	Intercept	−0.0181	0.7131
	BMI (kg/m <sup>2</sup> )	0.4438	0.0427
	Waist circumference squared (cm <sup>2</sup> )	0.0011	0.0001
	R square value	0.5923	
F (7,498)	Intercept	2.7339	0.6573
	BMI (kg/m <sup>2</sup> )	0.9833	0.0289
	Waist circumference squared (cm <sup>2</sup> )	0.0005	0.0000
	R square value	0.7790	
		F Value	Numerator Degrees of Freedom
M	Overall fit	1,091.7233	2
F	Overall fit	1,069.7605	2

<sup>a</sup> Percent body fat =  $100 \times (W - \text{FFM})/W$ ; FFM for each survey respondent was derived using the following equations:

Men:     FFM =  $-10.68 + 0.65 H^2/R + 0.26 W + 0.02 R$   
Women: FFM =  $-9.53 + 0.69 H^2/R + 0.17 W + 0.02 R$

where FFM = fat free mass (kg), H = height (cm), R = resistance (ohms), W = weight (kg). The estimate of FFM exceeded W for eight individuals; these individuals were excluded from analyses involving percent body fat.

Test for $H_0$ : Parameter = 0	Probability >  T
-0.0254	0.9798
10.3803	0.0000
16.5537	0.0000
4.1596	0.0001
34.0405	0.0000
10.3676	0.0000
Denominator Degrees of Freedom	Probability > F
51	0.0000
51	0.0000

<sup>b</sup> M = male, F = female,  $n$  = number of individuals with valid measurements. Pregnant and/or lactating women and women who had “blank but applicable” pregnancy and lactating status or who responded “I don’t know” to questions on pregnancy and lactating status were excluded from all analyses.

<sup>c</sup> Regression calculated with National Center for Health Statistics (NCHS) sampling weights and WesVar Complex Samples Version 3.0.

DATA SOURCE: U.S. Department of Health and Human Services, NCHS.

**TABLE H-12** Regression Analysis of Body Measurements:  
Body Mass Index Versus Percent Body Fat,<sup>a</sup> Men and Women  
19 Years of Age and Older, NHANES III (1988–1994)

Sex ( <i>n</i> ) <sup>b</sup>	Parameter	Results <sup>c</sup>	
		Parameter Estimate	Standard Error of Estimate
M (7,324)	Intercept	14.2220	0.3354
	Percent body fat	0.5594	0.0162
	R square value	0.5549	
F (7,724)	Intercept	5.0073	0.3761
	Percent body fat	0.6600	0.0120
	R square value	0.7745	

<sup>a</sup> Percent body fat =  $100 \times (W - \text{FFM})/W$ ; FFM for each survey respondent was derived using the following equations:

Men:       $\text{FFM} = -10.68 + 0.65 H^2/R + 0.26 W + 0.02 R$   
Women:  $\text{FFM} = -9.53 + 0.69 H^2/R + 0.17 W + 0.02 R$

where FFM = fat free mass (kg), H = height (cm), R = resistance (ohms), W = weight (kg). The estimate of FFM exceeded W for eight individuals; these individuals were excluded from analyses involving percent body fat.

**TABLE H-13** Regression Analysis of Body Measurements:  
Body Mass Index Versus Triceps Skinfold,<sup>a</sup> Men and Women  
19 Years of Age and Older, NHANES III (1988–1994)

Sex ( <i>n</i> ) <sup>b</sup>	Parameter	Results <sup>c</sup>	
		Parameter Estimate	Standard Error of Estimate
M (7,530)	Intercept	19.9043	0.1401
	Triceps skinfold (mm)	0.4924	0.0103
	R square value	0.4770	
F (7,858)	Intercept	13.3202	0.1626
	Triceps skinfold (mm)	0.5412	0.0082
	R square value	0.6269	

<sup>a</sup> Skinfold thickness exceeding 48.5 mm was too large for the caliper; measurements were not recorded for these individuals. These individuals were excluded from analyses involving triceps skinfold.

<sup>b</sup> M = male, F = female, *n* = number of individuals with valid measurements. Pregnant and/or lactating women and women who had “blank but applicable” pregnancy and

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Test for $H_0$ : Parameter = 0	Probability >  T
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42.4069	0.0000
34.6035	0.0000

13.3153	0.0000
55.2223	0.0000

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<sup>b</sup> M = male, F = female,  $n$  = number of individuals with valid measurements. Pregnant and/or lactating women and women who had “blank but applicable” pregnancy and lactating status or who responded “I don’t know” to questions on pregnancy and lactating status were excluded from all analyses.

<sup>c</sup> Regression calculated with National Center for Health Statistics (NCHS) sampling weights and WesVar Complex Samples Version 3.0.

DATA SOURCE: U.S. Department of Health and Human Services, NCHS.

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Test for $H_0$ : Parameter = 0	Probability >  T
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142.1172	0.0000
47.9364	0.0000

81.9403	0.0000
65.6884	0.0000

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lactating status or who responded “I don’t know” to questions on pregnancy and lactating status were excluded from all analyses.

<sup>c</sup> Regression calculated with National Center for Health Statistics (NCHS) sampling weights and WesVar Complex Samples Version 3.0.

DATA SOURCE: U.S. Department of Health and Human Services, NCHS.



**TABLE H-14** Regression Analysis of Body Measurements: Body Mass Index Versus Waist Circumference, Men and Women 19 Years of Age and Older, NHANES III (1988–1994)

Sex ( <i>n</i> ) <sup><i>a</i></sup>	Parameter	Results <sup><i>b</i></sup>	
		Parameter Estimate	Standard Error of Estimate
M (7,558)	Intercept	−4.2050	0.3413
	Waist circumference (cm)	0.3230	0.0037
	R square value	0.8142	
F (8,096)	Intercept	−6.2774	0.3461
	Waist circumference (cm)	0.3692	0.0042
	R square value	0.8014	

<sup>*a*</sup> M = male, F = female, *n* = number of individuals with valid measurements. Pregnant and/or lactating women and women who had “blank but applicable” pregnancy and lactating status or who responded “I don’t know” to questions on pregnancy and lactating status were excluded from all analyses.

Test for $H_0$ : Parameter = 0	Probability >  T
-12.3199	0.0000
87.2406	0.0000
-18.1401	0.0000
88.0352	0.0000

<sup>b</sup> Regression calculated with National Center for Health Statistics (NCHS) sampling weights and WesVar Complex Samples Version 3.0.  
DATA SOURCE: U.S. Department of Health and Human Services, NCHS.